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Claims:

A ball comprising an outer skin, the outer skin including a first layer which includes a syntactic material.

2. A ball according to claim 1 wherein the syntactic material comprises a plurality of resilient spherical bodies dispersed in a matrix.

3. A ball according to claim 1 wherein the syntactic material comprises a plurality of microspheres.

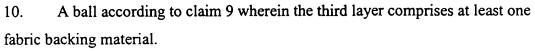
- 4. A ball according to claim 3 wherein the syntactic material comprises a plurality of polymeric hollow microspheres.
- 5. A ball according to claim 3 wherein the syntactic material comprises a plurality of acrylonitrile copolymer microspheres.

6. A ball according to claim 1 wherein the matrix material is selected from the group consisting of polyurethane, polyurethane foam, polyvinyl chloride, and latex.

A ball according to claim 1 in which the outer skin further comprises a second layer (26) adjacent the first layer.

- 8. A ball according to claim 7 wherein the second layer (26) comprises an aliphatic material.
- 9. A ball according to daim 7 further comprising a third layer (28) adjacent the first layer.

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A ball according to claim 1 wherein the matrix material is an adhesive. 11.

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A ball according to claim 1 further comprising a middle skin adjacent to 12. the outer skin, a backing layer adjacent to the middle skin, and an inflatable bladder adjacent to the backing layer.

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A ball comprising:

an inflatable bladder:

a first backing layer enclosing the inflatable bladder;

a middle layer enclosing the backing layer;

an outer skin enclosing the middle layer, the outer skin comprising;

a second backing layer;

a resilient layer enclosing the second backing layer and including a syntactic material, the syntactic material including polymeric microspheres dispersed in a polymeric matrix; and,

a substantially opaque layer enclosing the resilient layer.

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A ball according to claim 13 further comprising: 14.

a transparent layer enclosing the substantially opaque layer.

A ball according to claim 14 wherein the transparent layer includes an 15. inner surface having a graphic imprinted thereon.

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A ball according to claim 13 wherein the outer skin resilient layer 16. polymeric matrix comprises a latex adhesive, and wherein the resilient layer is thereby bonded to the backing layer and the substantially opaque layer.

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A method of manufacturing an outer covering material for a ball 17. comprising the steps of: forming a first transparent layer atop the substrate; forming an image on the first transparent layer; b. forming a second layer over the first transparent layer and the c. image; forming a third layer over the second layer, the third layer comprising\a syntactic material, the syntactic material including a plurality of hollow microspheres dispersed in a matrix; and adhering a backing layer to the third layer. e. The method of claim 17 wherein the step of forming a first transparent 18. layer comprises the steps of: providing a high-gloss release paper substrate; applying a layer of liquid polymeric material to the substrate; and b. curing the liquid polymeric material to form a cured, pliable, c. transparent first layer. The method of claim 17 wherein the step of forming a second layer 19. comprises the steps of: applying a layer of liquid polymeric material to the first transparent a. layer; and curing the liquid polymeric material to form a pliable second layer. c. The method of claim 17 wherein the step of forming a third layer 20. comprises the steps of: applying a layer of liquid syntactic material to the second layer, the a. liquid syntactic material comprising a plurality of resilient, hollow microspheres

curing the liquid syntactic material to form a resilient third layer.

dispersed in a liquid polymeric material; and

b.

- 21. The method of claim 17 wherein the hollow microspheres are formed of acrylonitrile copolymer.
- The method of claim 17 wherein the hollow microspheres have an average diameter of between 10 and 100 μm .
- 23. The method of claim 17 wherein the hollow microspheres have an average diameter of about 70 μm .

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